Reviewer's report

Title: Higher pre-infection vitamin E levels are associated with higher mortality in HIV-1-infected Kenyan women: a prospective study

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Reviewer: Philip Diaz

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General
This is a very well written manuscript that examines the relationship between blood vitamin E levels and progression of HIV among Kenyan female sex workers. There is some existing literature suggesting vitamin E levels are lower with more advanced HIV. However, vitamin E can decrease secondary to factors associated with progression of HIV, thereby confounding the interpretation of the relationship between vitamin E and the natural history of HIV. The current study provides a unique perspective on this relationship as the investigators are able to determine vitamin E levels prior to seroconversion, given the nature of their cohort and their close follow-up. The hypothesis that vitamin E levels correlate with faster progression of HIV has a scientific basis, in light of data demonstrating that vitamin E supplementation can increase expression of CCR5. The methods are described clearly and in adequate detail; the data and data reporting seem sound. The discussion and conclusions are lucid and are supported by the results. The title and abstract provide an accurate synopsis of the study.

The weaknesses of the study include the relatively small sample size and the fact that the majority of potentially eligible subjects had to be excluded for a number of reasons. These weaknesses are acknowledged by the authors in the discussion and do not represent “fatal flaws”. The major strength of the study is the recording of vitamin E status prior to HIV infection and the careful follow-up of the cohort.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)

Because of the potential effects of Vitamin E on CCR5, an important question the authors could address is whether vitamin E levels are associated with an increased risk of seroconversion. Although this is admittedly another question, one wonders if the investigators have examined vitamin E levels in their population of female sex workers who have remained HIV-seronegative.